

# Broward County Corrections Responds to Tuberculosis Threat

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**L**ike cholera and diphtheria, tuberculosis is often seen as a disease of the past. Many believe that although TB may still be prevalent in the third world, it is nothing to be concerned about here-it is not a disease that could strike them or their family or friends. In fact, most people, including many of the employees at the Broward Sheriff's Office Department of Detention, do not know much about tuberculosis.

## The TB Problem

However, because of its geographic location, its large number of immigrants, and the prevalence of AIDS and drug abuse, Broward County is a prime area for tuberculosis. Broward County, in southeast Florida, includes Fort Lauderdale and surrounding communities. The Department of Detention has three sites and a total inmate capacity of 3,656; it employs more than 1,300 deputy sheriffs and civilian support Staff.

The re-emergence of a disease that in the eyes of many was dormant has resulted in an immediate need for education and action. Broward

County's Department of Detention staff must now deal with an inmate population made up of a substantial number of individuals who are at risk for carrying or contracting tuberculosis.

At present, those most likely to contract the TB organism are:

- Those previously infected;
- Those with live, though inactive, tuberculosis bacilli;
- The homeless, elderly, or malnourished;
- Those in close contact with someone who has infectious TB;
- Persons receiving steroid or immune-suppressive medications; and
- Those who abuse drugs and alcohol.

Tuberculosis is caused by a bacterium that resembles a fungus. The bacterium can remain encapsulated in the body for a number of years under the control of the body's immune system. If the host's immunity is compromised, the organism can become active and multiply, resulting in various forms of tuberculosis. Persons who are

HIV-positive are at high risk for TB because of their immune-suppressed condition.

Persons infected with the mycobacterium organism spread the disease through their sputum and through respiratory droplets exhaled into the air. The incubation period varies, but it is usually possible to detect the disease through skin testing between ten and twelve weeks from the time of exposure. An employee exposed to a known TB patient should have a PPD (Purified Protein Derivation) test after three months.

## Inmate Testing

All Broward County inmates are given a PPD skin test within fourteen days of their incarceration. Results of the skin test are interpreted forty-eight to seventy-two hours after injection.

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Test results are then recorded in millimeters (mm) by measuring the diameter of the raised papule on the

forearm. Measurements are interpreted as follows:

- 0-5mm = Negative (unless patient is inactive)
- 5-9mm = Positive (if patient has been in close contact with an active case of TB or is HIV-positive)
- 10mm = Positive

A positive reaction indicates that the patient has been exposed to *Mycobacterium tuberculosis* recently or in the past. Further confirmation is required to determine if the patient actually has the disease.

For patients who claim to be or are known to be HIV-positive, the PPD test is done in the left forearm and 0.1cc of MSTA (Mumps Skin Test Antigen) is injected intradermally in the right forearm. Both sites are then read forty-eight to seventy-two hours after injection. A positive MSTA indicates that the patient's immune system is functioning and that the PPD results may be considered accurate. A negative MSTA requires further clinical evaluation, as it probably means that the PPD reading is unreliable because the patient's immune system is compromised.

### Treatment

In the Broward County jail facilities, if a patient has a positive PPD but a negative chest x-ray, he is given 300mg isoniazid (INH) every day with 50mg of vitamin B for six

months as a prophylaxis. INH prophylaxis helps prevent PPD-positive patients from developing a full-blown case of tuberculosis. The treatment lasts twelve months if the patient is HIV-positive.

Patients with a positive PPD and an abnormal chest x-ray are tested further through sputum samples collected every morning for a three-day period. The sputum is cultured for the presence of acid-fast bacilli. Triple-drug therapy is initiated, and the patient is placed in respiratory isolation in a negative air flow cell for a period of ten to twelve days.

Patients receiving prophylactic tuberculosis treatments are scheduled to be seen in the INH clinic at one-, two-, and six-month intervals for follow-up evaluations. Patients who are HIV-positive are seen again at nine and twelve months. Follow-up care includes liver function tests, evaluation of the MAR (medical administration record), which documents patient compliance with drug therapy, and interviews with the patient. INH is discontinued if liver functions are double the maximum levels.

### Coordination with Health Department

Names of inmates requiring INH are reported to the Broward County

Health Department, which supplies the facility with the INH. After being

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released, the inmate is responsible for seeking follow-up care at the local health department. Ideally, the department should provide the inmate with a medical referral to the health department, along with copies of his chest x-rays and PPD results. Plans are under way to supply this information to inmates upon their release. However, according to the health department, most releasees do not show up or make appointments for follow-up treatment. Unfortunately, if the patient goes longer than two weeks without INH, the entire process must be started again.

### Tracking TB Cases

The department developed a system to track the number of TB cases in our facilities. The report counts the numbers of male and female inmates tested each week, those found to be positive, the number on INH/vitamin B6, and the number of patients in the infirmary. The statistics, which are collected and evaluated weekly, serve as a barometer to measure deviations from week to week.

If there are significant changes in the weekly data, the department can

determine what immediate action might be necessary. If the numbers begin to increase, it might be a signal that the disease is spreading within the facilities as a result of improper procedures. The department would then evaluate its current practices immediately and make any necessary adjustments.

## Managing TB in the Jail

Tuberculosis in the jail setting can become very serious. Inmates need to be educated at the time of their intake history and physical about health risks if they refuse to be tested for TB. Every effort should be made to discourage all refusals; if an inmate continues to refuse testing, he should be referred to the medical doctor and, if necessary, placed in medical isolation.

## Educating Staff

Managing and treating inmates are not the only necessary actions. The staff, who must deal with the inmates every day, also require attention. Therefore, the department decided to take steps to control rumors and reduce employees' apprehension.

Dr. Harry Schuman, Medical Director of Prison Health Services, Inc., which provides contracted medical services to the facility, was instrumental in developing a clinical presentation to help educate the staff. He is also responsible for managing the care of tuberculosis patients in the jail.

The first group to receive the information included the commanders of the three facilities and other key personnel in positions to influence others. After the initial group received the in-service training, the program was offered to the rest of the staff. The intention was not to have staff become experts on tuberculosis, but rather to have them understand that it can be managed and controlled.

## Threat of Other Diseases

Corrections officers must understand that when one disease is in the limelight, there is a tendency to overlook, or become complacent about, other diseases. Hepatitis, HIV, measles, and all other communicable diseases remain serious threats.

Communicable diseases can be extremely dangerous—just as inmates themselves can. However, like the dangerous, high-risk inmate, these diseases can be controlled and managed without exposing the staff to unnecessary risks.

In December 1990 the Centers for Disease Control published the following guidelines for reducing risks when working in high-risk environments:

- **Annual testing** of employees should be implemented, utilizing the standard Mantoux skin test. This serves to develop a baseline. Re-testing should follow annually or in the event of an exposure.

- **A face mask** should be used when dealing with TB patients. The cup-shaped surgical mask is recommended rather than tie-on type surgical masks.
- **Adequate ventilation** is extremely beneficial because the TB bacillus is sensitive to light and air. If possible, heating and air-conditioning systems should be set on non-recycle modes.
- **Exposure notification and medical follow-up** protocols, policies, and procedures should be established. The management of potential exposures is vital in controlling the spread of all communicable diseases.

**N**othing can provide total protection to employees. However, the procedures to reduce risks significantly are simple and readily available. Each department has a responsibility morally, if not legally, to provide as safe a working environment as possible for its staff. Is your department meeting that obligation?

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